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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,088	12/02/2003	Reed J. Blau	2507-6010US (22031-US)	6016

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EXAMINER	
HWU, DAVIS D	
ART UNIT	**PAPER NUMBER**
3752	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,088	BLAU ET AL.	
	Examiner	Art Unit	
	Davis D. Hwu	3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-16,18-28,31-65 and 69-78* is/are pending in the application.

4a) Of the above claim(s) *29,30,66,67,79-90 and 94-114* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-16,18-28,31-65 and 69-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *1/11/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. Applicant's amendment and arguments of January 11, 2007 are entered.

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 66 is withdrawn since it is identical to withdrawn claim 29 and claim 67 is withdrawn since it is identical to withdrawn claim 30.

5. Newly submitted claims 94-114 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: they introduce new matters that would require further search and consideration.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 94-114 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

6. Claims 1-5, 7-10, 13, 14, 18, 22-25, 57, 58, 60-65, 69, 72-75, 77, and 78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander (US Patent 6,019,177).

Drakin discloses a fire suppression system comprising a gas generant 20 formulated to pyrotechnically produce an inert gas mixture a heat management system position and

configured to reduce a temperature of the inert gas mixture, and an igniter 22, wherein the gas generant is formulated to produce at least one gaseous combination product and at least one solid combustion product when combusted as recited in claim 4. Drakin does not disclose an inert gas mixture being substantially free of carbon-containing gases. Olander '177 teaches a method of fire suppression comprising the use of halogen which is free of carbon-containing gases for safety and to reduce the effects on the environment. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Drakin by replacing the inert gas mixture with an inert gas mixture substantially free of carbon containing gases as taught by Olander for safety and to reduce the effects on the environment. Regarding claim 7, it is well known in the art that gas generants are formulated to produce very little smoke or particulates. The exact amounts are a matter of design choice. The limitations of claim 22 would have been matters of design choice depending on the systems requirements for a particular application. It is well known that fires are extinguished by reducing an oxygen content in a space.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Ludwig et al.

Ludwig et al. teaches an inert gas comprising nitrogen and water (Column 12, lines 27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the inert gas mixture of Drakin and Olander comprising nitrogen and water since Ludwig et al. teaches that such compositions are known in the art.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Lundstrom et al.

Lundstrom et al. teach a gas generant comprising an oxidizer, a fuel, and a binder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Drakin and Olander by having the gas generant comprising an oxidizer, a fuel, and a binder since Lundstrom et al. teach that such combinations are known.

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Drakin and Olander comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Drakin and Olander

comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

11. Claims 19-21 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Knowlton et al.

Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Drakin and Olander a phase change material comprising the various nitrates as recited in order to manage the heat.

12. Claims 26-28, 31-42, 45, 48, 49, 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander.

Drakin also discloses the heat management comprising an effluent train. The gas generant being configured into at least one pellet would have been an obvious matter of design choice since such a modification would involved a mere change in the shape of an object which is generally recognized as being within the level or ordinary skill in the art. Regarding claim 37, the percentage as recited would have been a matter of design choice in producing a safe concentration of the substances.

13. Claims 43 and 59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Ludwig et al.

Ludwig et al. teaches an inert gas comprising nitrogen and water (Column 12, lines 27). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the inert gas mixture of Drakin and Olander comprising nitrogen and water since Ludwig et al. teaches that such compositions are known in the art.

14. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Lundstrom et al.

Lundstrom et al. teach a gas generant comprising an oxidizer, a fuel, and a binder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Drakin and Olander by having the gas generant comprising an oxidizer, a fuel, and a binder since Lundstrom et al. teach that such combinations are known.

15. Claims 46 and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and in further view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Drakin and Olander comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

16. Claim 47 and 71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view of Olander and further in view of Taylor et al. and Hinshaw et al.
Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Drakin comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

17. Claims 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drakin in view Olander and further in view of Knowlton et al.
Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Drakin and Olander a phase change material comprising the various nitrates as recited in order to manage the heat.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The patents to Olander (5,861,106) and Lewis et al. are pertinent to Applicant's invention.

19., Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis D. Hwu whose telephone number is 571-272-

4904. The examiner can normally be reached on 8:00-4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

DAVIS HWU
PRIMARY EXAMINER